

**Notice of Allowability**

Application No.

10/539,121

Applicant(s)

GIOVANOLA ET AL.

Examiner

Roberts Culbert

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1763

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed 8/1/07.
2. ☒ The allowed claim(s) is/are 18-24.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                 | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date 6/16/05 | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material           | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

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### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Stephen J. Schwarz on 9/4/07.

The application has been amended as follows:

1. **In Claims 18 and 21, replace "highly acid" with "acid".**
2. **Cancel Claims 25-29.**
3. **Replace the Abstract with the following new Abstract.**

**Abstract:** Process for protectively coating against aggressive liquids hydraulic microcircuits made in a resin, particularly for an ink jet printhead, consisting of: disposing of a silicon substrate comprising a sacrificial layer of copper, deposited on the substrate and defining the inner shape of the hydraulic microcircuits; depositing on top of the outer surface of the sacrificial layer, by means of an electrochemical process, at least one protective, metallic coating layer; applying on the sacrificial layer a non-photosensitive epoxy or polyamide resin, having a predetermined thickness and suitable for completely covering the sacrificial layer; effecting a polymerization of the resin to increase its mechanical resistance to mechanical and thermal stresses and performing a planarization of the outer surface of the resin, by means of a mechanical lapping and simultaneous chemical treatment; removing the sacrificial layer through a chemical etching in a highly acid bath; and depositing a metallic, protective layer on the outer surface of the resin through vacuum evaporation.

### ***Allowable Subject Matter***

Claims 18-24 are allowed.

The following is an examiner's statement of reasons for allowance:

The Prior Art of record, (See for example, U.S. Patent 5,332,594 to Bol) teach a method of forming hydraulic microcircuits comprising providing a silicon substrate covered by a plurality of metallic and dielectric layers, and also comprising a sacrificial metallic layer defining the inner shape of said hydraulic microcircuits; depositing on an outer surface of the sacrificial metallic layer, at least one protective coating layer having a predetermined thickness and completely covering the sacrificial layer; removing the

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sacrificial metallic layer via a chemical etching. The Prior Art of record (See U.S. Patent 5,733,433 to Lee et al.) further teach forming a protective coating by an electrochemical process. However the prior art references fail to teach or render obvious a method including the steps of depositing on an outer surface of the sacrificial metallic layer, in an electrochemical process, at least one metallic protective coating layer, applying on said metallic protective coating layer an adhesion layer to promote the adhesion of a resin on said metallic protective coating layer, depositing on said adhesion layer a non-photosensitive epoxy or polyamide resin, having a predetermined thickness and completely covering said sacrificial layer, polymerizing said resin to increase its mechanical resistance to mechanical and thermal stresses, and removing said sacrificial metallic layer via a chemical etching, by means of an acid bath as recited in independent Claim 18.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

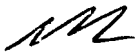
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



R. Culbert  
Examiner  
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